

Memorandum

TO: Ken Rukavina, PE, Director of Community Development

FROM: Vanessa Munoz, PE, TE, Consultant Traffic Engineer
Nicolle Spann, PE, TE, Consultant Traffic Engineer

DATE: February 18, 2021

SUBJECT: **DRAFT- Traffic Impact Analysis for Ladera Linda Community Center and Park Project, City of Rancho Palos Verdes**

This traffic study (Study) presents a summary of the traffic factors related to the demolition of an existing community center to accommodate proposed development of a new 6,790 square foot community center and park site improvements on a 11.031-acre park site in Rancho Palos Verdes. The analysis observes the traffic impacts on the Palos Verdes Drive South and Forrestal Drive intersection, parking impacts, and if the development will generate cumulative impacts. The analysis is based upon information provided by the City, and standard reference materials. The assumptions, methodology, analysis, and findings are discussed in the following pages.

Project Description

The proposed community center and park improvements are planned to replace the existing community center and park improvements on Forrestal Drive. The existing and proposed land use areas are detailed in **Table 1** below. The existing community center will be demolished and replaced with a smaller, new community center along with park improvements.



Table 1: Existing and Proposed Project Land Use Areas

	Existing	Proposed
Recreational Community Center	19,000 SF	6,790 SF
Public Park Grounds	11.031 acres	11.031 acres

Figure 1: Project Site Location

The existing and proposed **Figures 2 and 3** show the improvement changes proposed.



Figure 2: Existing Ladera Linda Community Park Improvements

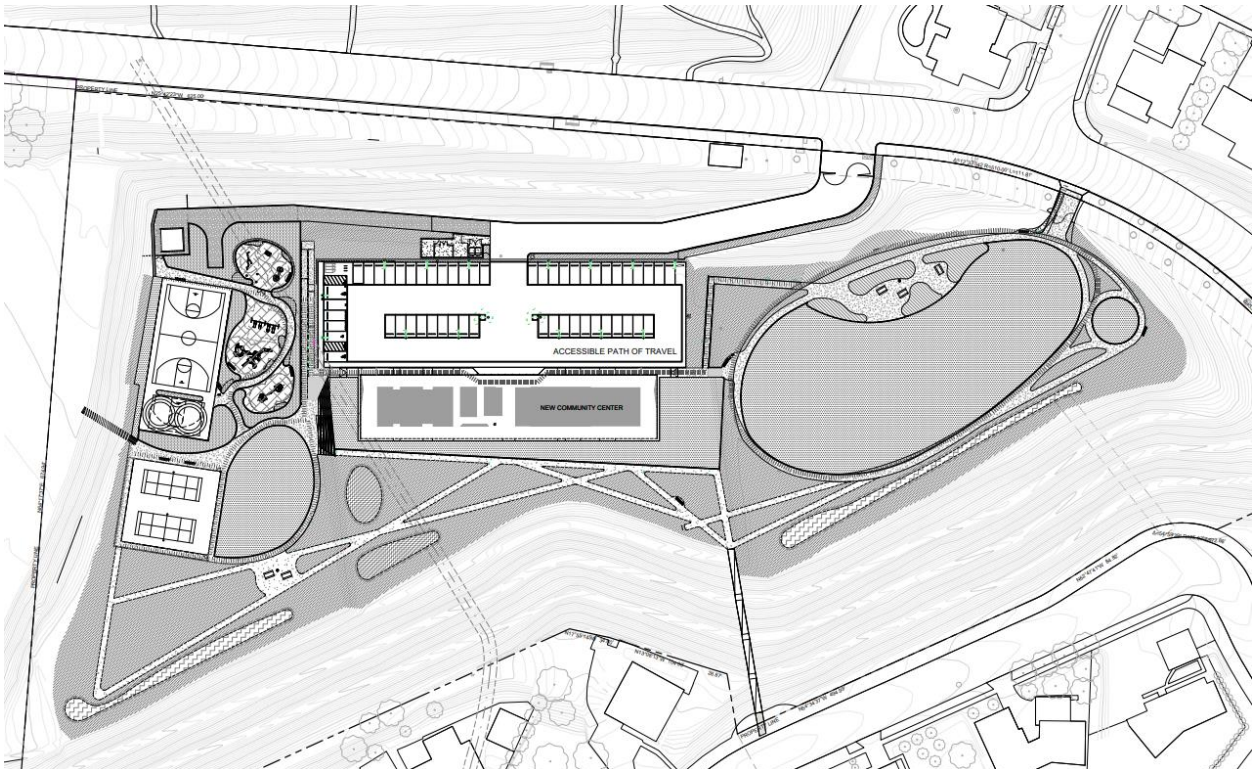


Figure 3: Proposed Ladera Linda Community Park Improvements

Existing Conditions

Forrestal Drive is a 2-lane north-south roadway that connects residential streets, Ladera Linda Park and Community Center and soccer fields owned by the Palos Verdes Peninsula Unified School District (PVPUSD) and operated by AYSO. Forrestal Drive intersects with Palos Verdes Drive South less than 1 mile from the proposed project entrance.

24-hour approach volume counts were collected at the intersection of Forrestal Drive/ Trump National Drive at Palos Verdes Drive South for a traffic signal warrant analysis report in 2018 presented to the City's Traffic Safety Commission related to traffic concerns in area and 2019 on the following dates:

- Tuesday, July 24, 2018,
- Saturday, July 28, 2018,
- Tuesday, October 1, 2019,
- Saturday, September 28, 2019

The 2018 and 2019 counts were collected prior to the effects of COVID-19. The 2018 and 2019 counts were collected while the Ladera Linda Community Center and Park was open and include trips generated to the existing Ladera Linda Park. The 2019 counts were collected during AYSO season with the Saturday 2019 counts being collected on a AYSO game day. The existing 2018 and 2019 traffic approach volumes collected at the intersection are identified in **Table 2**.

**Table 2: Palos Verdes Drive South (EB-WB) at Forrestal (SB)/ Trump National Drive (NB)
2018 and 2019 Traffic Volumes**

Year	Date	Data Type	Northbound	Southbound	Eastbound	Westbound
2018	Tuesday (no AYSO)	ADT	569	685	9556	7863
		AM Peak Hour	32 (10:00)	65 (7:00)	471 (11:00)	669 (8:00)
		PM Peak Hour	67 (2:00)	47 (3:00)	992 (4:00)	564 (5:00)
	Saturday (no AYSO)	ADT	915	685	9819	8349
		AM Peak Hour	51 (11:00)	65 (11:00)	599 (11:00)	624 (12:00)
		PM Peak Hour	90 (3:00)	55 (12:00)	814 (2:00)	675 (2:00)
2019	Tuesday (no AYSO)	ADT	484	677	7137	7862
		AM Peak Hour	40 (11:00)	71 (7:00)	407 (8:00)	685 (8:00)
		PM Peak Hour	65 (2:00)	62 (2:00)	814 (3:00)	606 (3:00)
	Saturday (AYSO)	ADT	604	776	6333	7695
		AM Peak Hour	49 (11:00)	103 (10:00)	426 (10:00)	593 (10:00)
		PM Peak Hour	59 (3:00)	91 (1:00)	533 (12:00)	614 (2:00)

The AM and PM peak hours identified in **Table 2** below are the observed peak hours for each direction of travel based on the 24-hour data. The AM peak hour for the Southbound vehicles on Forrestal Drive is at 7:00 AM on a weekday and 10:00 or 11:00 on a weekend. For the purpose of this report, it can be safely assumed that the peak hours on Forrestal Drive are between 7:00 AM-9:00 AM and 4:00 PM – 6:00 PM on a weekday.

The Southbound traffic volumes on Forrestal Drive have a peak hour volume of 103 vehicles per hour (vph) on a AYSO soccer game day, an increase of 38 vehicles per hour compared to a non-AYSO soccer game weekend.

Using these Saturday volumes collected in 2019, a traffic signal was warranted at the intersection of Palos Verdes Drive South at Forrestal/ Trump National Drive. The Saturday 2019 volumes used to warrant the traffic signal included trips to the existing Ladera Linda Community Center and Park, AYSO soccer games, Trump National, and single-family homes off Pirate Drive. The addition of the proposed Ladera Linda Community Center and Park Project does not have an effect on the status of the traffic signal warrant.

The traffic counts that were collected only show the southbound approach volume counts on Forrestal Drive and do not include the northbound volumes on Forrestal Drive. Based on a trip generation of all of the land uses off Forrestal Drive, roughly 2,500 trips per day are travelling on Forrestal Drive on an AYSO weekend and 1,900 trips per day are travelling on a weekday. The trip generation of all land uses on Forrestal Drive are in found in **Attachment A**. Amongst the daily rates, each land use identified in **Table 3** contributes a percentage of the daily vehicle trips.

Table 3: Traffic volume distribution of land uses on Forrestal Drive

Land Use	Weekday	Weekend
Single Family Detached Housing	80%	62%
AYSO Soccer Fields	8%	33%
Ladera Linda Community Park	12%	5%

Existing Park Vs. Proposed Park- Trip Generation and Usage

Using the latest edition of the Institute of Transportation Engineer's *Trip (ITE) Generation Manual* (10th Edition, 2017), vehicle trips to proposed land uses can be estimated based on historical data observed at similar land uses. A recreational community center is expected to generate 28.82 daily trips per thousand square feet (TSF), 1.76 vehicle trips and 2.31 vehicle trips during the AM and PM peak hour per TSF, respectively. A public park is expected to generate 0.78 daily trips per acre, 0.02 vehicle trips and 0.11 vehicle trips during the AM and PM peak hour per acre, respectively. The AM and PM peak hours for the trip generation on a weekday are based on the peak hour of the adjacent street, Forrestal Drive, between 7:00 AM-9:00 AM and 4:00 PM – 6:00 PM. The peak hours for the trip generation on a weekend are based on the peak hour of each land use and are conservatively assumed that each land use has the same peak hour. These peak hours are applied to this analysis to determine the maximum impact on the adjacent street. These rates and the inbound and outbound splits are summarized in **Table 4**.



Table 4: Trip Generation for Proposed Project

Land Use/ Land Use Number	Descriptor/	Day	Daily Trips	Trip Generation Rates ¹ / Generated Volumes ²			
	Gross Area			AM Peak Hour		PM Peak Hour	
				In	Out	In	Out
Trip Generation Rates:							
Recreational Community Center - 495	TSF	Weekday	28.82	1.16	0.60	1.09	1.22
		Weekend	13.60	0.83	0.65	0.83	0.65
Public Park - 411	Acre	Weekday	0.78	0.01	0.10	0.05	0.06
		Weekend	2.19	0.12	0.19	0.12	0.19
Project Trip Generation:							
Recreational Community Center	6.79 TSF	Weekday	196	8	4	7	8
		Weekend	92	6	4	6	4
Public Park	11.031 Acres	Weekday	9	0	1	1	1
		Weekend	24	1	2	1	2
	Total	Weekday	204	8	5	8	9
		Weekend	117	7	7	7	7

¹ Rates are from ITE's *Trip Generation Manual*, 10th Edition, 2017

² All trips are rounded to the nearest whole number

The proposed community center of 6,790 square feet of gross building area would generate 196 daily trips on a weekday and 92 daily trips on a weekend. The 11.031 acre public park within the proposed Ladera Linda Community Park would generate 9 daily trips on a weekday and 24 daily trips on a weekend.

The proposed project is replacing a community center/park that is operating under existing conditions. The cumulative impact of the proposed community center and park is analyzed based off the trips generated from the proposed community center minus the existing community center.

Shown in **Table 5**, under the existing land use and at full capacity, Ladera Linda Community Center and Park generate 556 trips per day with 34 trips in the AM peak hour and 45 trips in the PM peak hour on a weekday (283 trips per day on a weekend).

Table 5: Existing Trip Generation at Full Capacity

Existing Ladera Linda Community Park at Full Capacity	Gross Area	Day	Daily Trips	Trip Generation Generated Volumes			
				AM Peak Hour		PM Peak Hour	
				In	Out	In	Out
Project Trip Generation:							
Recreational Community Center	19 TSF	Weekday	548	22	11	21	23
		Weekend	258	16	12	16	12
Public Park	11.031 Acres	Weekday	9	0	1	1	1
		Weekend	24	1	2	1	2
	Total	Weekday	556	22	12	21	24
		Weekend	283	17	14	17	14

However, in recent years (2018 and 2019), the existing Community Center was not operating at full capacity. In 2019, the Community Center was used for limited classes in room space totaling approximately 8,000 square feet. **Table 6** shows the trip generation of the existing park and

community center at normal capacity. In 2019 normal traffic conditions, the community center and park generate 239 daily trips with 15 trips in the AM peak hour and 19 trips in the PM peak hour on a weekday.

Table 6: Existing Trip Generation at Normal (2018/ 2019) Capacity

Existing Ladera Linda Community Park at Normal Capacity		Gross Area	Day	Daily Trips	Trip Generation Generated Volumes			
					AM Peak Hour		PM Peak Hour	
					In	Out	In	Out
Project Trip Generation:								
Recreational Community Center		8 TSF	Weekday	231	9	5	9	10
			Weekend	109	7	5	7	5
Public Park		11.031 Acres	Weekday	9	0	1	1	1
			Weekend	24	1	2	1	2
		Total	Weekday	239	9	6	9	10
			Weekend	133	8	7	8	7

The net impact that the proposed community center and park based on the proposed trip generation minus the existing trip generation (Table 4 totals minus Table 6 totals) would cause a slight decrease in vehicular trips on Forrestal Drive, shown in **Table 7**.

Table 7: Proposed Ladera Linda Community Park Trip Generation Impact on Traffic

<i>Proposed Ladera Linda Community Park Traffic Change (Proposed full capacity minus existing normal capacity)</i>	<i>Gross Area</i>	<i>Day</i>	<i>Daily Trips</i>	<i>Trip Generation Generated Volumes</i>			
				<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
				<i>In</i>	<i>Out</i>	<i>In</i>	<i>Out</i>
	Total	Weekday	-35	-1	-1	-1	-1
		Weekend	-16	-1	-1	-1	-1

As there is a decrease in trip generation from the existing conditions, the proposed park and community center does not create a cumulative impact on traffic on Forrestal Drive or the City of Rancho Palos Verdes.

Parking Generation

Using the latest edition of the Institute of Transportation Engineer's (ITE) *Parking Generation Manual* (5th Edition, 2019), parking spaces needed at proposed land uses can be estimated based on historical data observed at similar land uses. A recreational community center is expected to need 2.07 parking stalls per TSF of gross floor area on a weekday and 4.0 parking stalls per TSF on a weekend. A public park is expected to need 1.21 parking stalls per acre on a weekend. There is no data for weekday parking capacity for a public park. These rates are summarized in **Table 8**.

Table 8: Parking generation for the proposed Ladera Linda Community Park

Land Use/ Land Use Number	Descriptor/	Day	Parking Generation Rates ¹ / Generated Spaces ²
Trip Generation Rates:			
495 - Recreational Community Center	TSF	Weekday	2.07
		Weekend	4.00
411 - Public Park	Acre	Weekday	n/a
		Weekend	1.21
Project Trip Generation:			
Recreational Community Center	6.79 TSF	Weekday	14
		Weekend	27
Public Park	11.031 Acres	Weekday	n/a
		Weekend	13
	Total	Weekday	14
		Weekend	41

¹ Rates are from ITE's *Parking Generation Manual*, 5th Edition, 2019

² All trips are rounded to the nearest whole number

The proposed Ladera Linda Community Center and Park has plans for installing 54 parking stalls. This exceeds the parking stalls required for both weekend and weekday conditions for the proposed project.

Findings and Conclusions

Based on the above traffic analysis, the following conclusions have been made:

- The proposed community center and park project does not create a cumulative impact on traffic within the City of Rancho Palos Verdes.
- The traffic on Forrestal Drive is mostly attributed to the only outlet to over 160 single family homes from Pirate Drive.
- The proposed community center and park project does not affect the traffic signal warrant at the intersection of Palos Verdes Drive South and Forrestal/ Trump National. The traffic signal was warranted based on weekend traffic volumes due to AYSO soccer matches, Trump National traffic and residential trips accessing the intersection.
- The proposed parking for the community center and park exceeds the number of required parking spaces to meet the parking demand from the proposed project.



ATTACHMENT A

TRIP GENERATION ON ALL LAND USES ON FORRESTAL DRIVE



Land Use/ Land Use Number	Descriptor/ Gross Area	Day	Daily Trips	Normal Capacity Existing Generated Volumes			
				AM Peak Hour		PM Peak Hour	
				In	Out	In	Out
Trip Generation Rates:							
Recreational Community Center - 495	TSF	Weekday	28.82	1.16	0.60	1.09	1.22
		Weekend	13.60	0.83	0.65	0.83	0.65
Public Park - 411	Acre	Weekday	0.78	0.01	0.10	0.05	0.06
		Weekend	2.19	0.12	0.19	0.12	0.19
Single Family Detached Housing - 210	Dwelling Units	Weekday	9.44	0.19	0.56	0.62	0.37
		Weekend	9.54	0.50	0.43	0.50	0.43
Soccer Complex - 488	Fields	Weekday	71.33	0.60	0.39	10.84	5.59
		Weekend	404.88	19.25	20.85		
Project Trip Generation:							
Recreational Community Center	8 TSF	Weekday	231	9	5	9	10
		Weekend	109	7	5	7	5
Public Park	11.03 Acres	Weekday	9	0	1	1	1
		Weekend	24	1	2	1	2
Single Family Detached Housing	162 Dwelling Units	Weekday	1529	30	90	101	59
		Weekend	1545	81	69	81	69
Soccer Complex	2 Fields	Weekday	143	1	1	22	11
		Weekend	810	38	42	0	0
	Total	Weekday	1911	41	97	132	81
		Weekend	2488	128	118	89	77